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(Not likely under the current administration. Climate change, as we all know, is a Chinese hoax).

Study: Biomass electricity could create 22,000 additional jobs: By Peter Aleshire Special to the Independent

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Replacing coal fired power plants — like the now closed Navajo Generating plant — with biomass burning plants could not only save coal industry jobs, but generate 50 percent more jobs in forest industries, according to an international study.

NAVAJO & APACHE COUNTIES — Shifting from coal-fired power plants to biomass burning plants can not only slow climate warning, it can boost local jobs, according to an international study published in the scientific journal *Joule*.

A large-scale shift from burning coal to using biomass produced by logging and forest restoration projects would not only retain 40,000 jobs in the power industry, but create an additional 22,000 jobs in the forestry and transportation industry.

The study has special weight for Northern Arizona, where utilities are already shutting down coal-fired power plants because they cost more money to operate than solar, wind or natural gas plants. Burning biomass costs a little less than coal, but more than wind, solar or natural gas.



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The shift has hit Navajo and Apache counties hard, where coal plants and their spinoffs account for 4-10 percent of the jobs.

Both Navajo and Apache counties have recently approved wind and solar energy power plants, but those renewable energy sources provide only a fraction of the jobs lost as coal mines and power plants shut down.

Even more urgent, the high cost of processing millions of tons of low-value biomass on every acre of forested land has stalled efforts to restore forest health and reduce wildfire risk through forest thinning projects. The 4-Forests Restoration Initiative has made little progress for the past decade for lack of a market for the biomass.

“This study shows how investing in climate change mitigation could actually ease the transition for coal workers, who would otherwise be confronted with abrupt job losses due to the retirement of the coal fleet by 2050,” said co-author Kasparas Spokas of Princeton University.

The Arizona Corporation Commission has balked at requiring utilities to buy power from biomass, which killed plans to convert a 60-megawatt unit at Cholla Power Plant from coal to biomass. The lack of a biomass mandate could also ultimately force the shutdown of the only biomass burning power plant in the region, a 28-megawatt (MW) plant operated by NovoPower near Snowflake, which is nearing the end of a long-term contract to sell energy to APS and the Salt River Project.

The international study of biomass power generation suggests a shift to biomass could not only restore forests and reduce wildfires, it could bolster the economies of rural areas by saving power plant jobs and creating forestry jobs.

“Our analysis shows that acting now and investing in this emission-mitigating strategy can be beneficial for employment in the U.S. coal sector,” said lead author Piera Patrizio according to a summary of the research published on the website *Science Daily*.

Modern biomass electrical generating plants can capture and store 99 percent of the carbon produced by burning biomass. If the biomass doesn't go into the pollution-capturing power plant, it will eventually burn or decompose – releasing the carbon directly into the atmosphere.

Biomass burning power plants would keep the carbon out of the atmosphere for at least 1,000 years, the study authors concluded. The benefits would likely be even greater in Arizona, where the biomass isn't grown on tree farms but harvested in thinning projects. Those thinning projects would dramatically reduce the chance of a town-destroying crown fire. Thinning would also protect watersheds and reservoirs on which Phoenix depends. The study didn't include those kinds of spinoff benefits since it focused on local jobs and the release of climate-altering pollutants.



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“We took into account the fact that biomass must be grown and harvested in a sustainable way in order to be considered carbon-neutral and thus obtain negative emissions,” said co-author Sabine Fuss.

Burning coal releases carbon stored in the earth for millions of years. Burning biomass is considered carbon neutral, since the carbon stored in trees is constantly recycled anyway. Burning biomass in power plants with pollution controls actually can remove carbon longer term.

The researchers used several different economic forecasting models to estimate the number of jobs biomass burning would produce, both in the power sector and in forestry and transportation.

The massive Navajo Generating Station near Page and the coal mine that supplied it closed last year, cutting Navajo County’s property and sales tax revenue by several million. The closures also eliminated roughly 1,000 jobs. The Cholla coal-fired plant and the Coronado coal-fired plant are also slated to close in the next decade, at the cost of hundreds of additional jobs in Navajo and Apache counties.

On the other hand, the lack of a secure future for biomass burning plants has endangered the survival of the forest products industry in the area and threatens to upend the economics of future forest thinning efforts.

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